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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/544,762	04/07/2000	Shannon Mary Nelson	NORTH-390A/A-2241	9968

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EXAMINER

SEDIGHIAN, REZA

ART UNIT

PAPER NUMBER

2633

DATE MAILED: 07/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/544,762

Applicant(s)

NELSON ET AL.

Examiner

M. R. Sedighian

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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1. This communication is responsive to applicant's 5/6/2002 amendments in the application of Shannon Mary Nelson et al. for "Rugged shock resistant backplane for embedded systems" filed 4/7/2000. The amendments have been entered. Claims 1-15 are now pending.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 6-10, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bishop (US Patent No: 6,038,355) in view of Ozeki et al. (US Patent No: 6,317,242).

Regarding claims 1, 8, and 15, Bishop discloses a shock-resistant system (fig. 1) for interconnecting circuit cards (14, 16, 18, fig. 1) within a computer system (col. 2, lines 63-67, col. 3, lines 1-10, col. 6, lines 19-20) to enable data to be transmitted and received therebetween (col. 6, lines 21-22), comprising: a common backplane (12, fig. 1) having a plurality of circuit card connectors (20, fig. 1) disposed in spaced apart relation (col. 3, lines 25-30) for supporting circuit cards (col. 3, lines 34-39) in upright parallel relationship (col. 3, line 29); a first circuit card (14, fig. 1) mounted to one of the circuit card connectors (20, fig. 1) and having an optical interface (30, fig. 1) that is comprised of a transmitter (34, fig. 2) and a receiver (58, fig. 2); a second circuit card (16, fig. 1) mounted to another one of connectors (20, fig. 1) and having a second optical interface (30, fig. 1) with a transmitter (34, fig. 2) and a receiver (58, fig. 2); wherein the first and second circuit cards are maintained in fixed relationship to one another via the common backplane to effectuate optical intercard communications therebetween (col. 3, lines

40-41), and the intercard communications being conducted independent of shock-susceptible wired connectors (col. 3, lines 44-66). Bishop differs from the claimed invention in that Bishop does not disclose the first receiver photodiode on the first circuit card is operative to receive signals produced from the second transmitter LED of the second circuit card, and second receiver photodiode being operative to receive signals from the first transmitter LED of the first circuit card. Ozeki discloses a plurality of circuit cards (40, fig. 1) each having light emitting/receiving circuits (42, 42a, 42b, fig. 1), and wherein the first receiver photodiode (42b, A, fig. 1) on the first circuit card (40, A, fig. 1) is operative to receive signals produced from the second transmitter LED (42a, D, fig. 1) of the second circuit card (40, D, fig. 1), and a second receiver photodiode (42b, D, fig. 1) being operative to receive signals from the first transmitter LED (42a, A, fig. 1) of the first circuit card (40, A, fig. 1). Therefore, it would have been obvious to an artisan at the time of invention to incorporate optical transceiver modules such as the one of Ozeki for the optical transmission/reception interfaces of Bishop in order to provide a bi-directional optical data transmission and reception between a plurality of components within a computer system.

Regarding claims 2 and 9, Ozeki discloses optically transmitted infrared radiation (col. 1, lines 5-11).

Regarding claims 3 and 10, Bishop further discloses the transmission and reception signals comprise a standardized infrared communication scheme protocol (col. 6, lines 22-25).

Regarding claims 6 and 13, Bishop discloses the first and second circuit cards are operative to run an embedded application (col. 6, lines 19-25).

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Regarding claims 7 and 14, Ozeki disclose the system comprises a multiplicity of circuit cards (col. 5, line 55 and 40, A, B, D, E, fig. 1) each having an LED (42a, fig. 1) and a photodiode (42b, fig. 1) formed thereon and the circuit cards are being operative to transmit and receive data via LEDs and photodiodes with respective other circuit cards (col. 5, lines 65-67, col. 6, lines 1-24, col. 7, lines 3-11).

4. Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bishop (US Patent No: 6,038,355) in view of Ozeki et al. (US Patent No: 6,317,242) in further view of Croft et al. (US Patent No: 5,864,708).

Regarding claims 4 and 11, the combination of Bishop and Ozeki further differs from the claimed invention in that Bishop and Ozeki do not specifically disclose the infrared communication protocol is developed by the infrared data association. Croft discloses wireless transceivers (63, 64, fig. 1) that communicate with each other by using Infrared Data Association standards (col. 3, lines 5-14). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate Infrared Data Association standards or protocols such as the one discussed by Croft for the infrared data transmission and reception in the modified optical communication systems of Bishop and Ozeki in order to provide a reliable method of data transmission by implementing a standard Infrared protocol to detect transmission errors and to avoid collisions.

5. Claims 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bishop (US Patent No: 6,038,355) in view of Ozeki et al. (US Patent No: 6,317,242) in further view of Barina (US Patent No: 4,829,596).

Regarding claims 5 and 12, the combination of Bishop and Ozeki further differs from the claimed invention in that Bishop and Ozeki do not disclose the first and second circuit cards are housed within an enclosure. Barina discloses a housing (12, fig. 1) which includes a series of slots that receive a plurality of circuit boards (16-18, fig. 1) that are connected to a mother board which extends along the back surface of the housing to a backplane (col. 2, lines 55-61 and 11, fig. 1). It is inherent that electrical or optical components are housed within a housing for the reason of safety and protection, and it would have been obvious to provide an enclosure such as the one Barina for the circuit cards in the modified optical communication system of Bishop and Ozeki in order to protect its components and to provide safety for the users.

6. Applicant's arguments with respect to claims 1-3, 5, and 7-14 have been considered but are moot in view of the new ground(s) of rejection.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after


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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad R Sedighian whose telephone number is (703) 308-9063. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703) 305-4729. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9314

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

  
JASON CHAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600